

III. REMARKS

Claims 1, 8, 12 and 15 are amended. This amendment is being filed concurrently with an RCE after receipt of the Examiner's Answer in the pending appeal.

As set forth in the Final Office Action, the examiner rejected claims 1-2 and 8-14 under 35 U.S.C. 103(a) as being unpatentable over Kleijn et al. (US 6,223,151) in view of Griffin (IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. 36, No. 8, August 1988, pages 1223-1235; Griffin, Lim: Multiband Excitation Vocoder). Furthermore, claims 3-5, 7 and 15-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kleijn et al. in view of Griffin, and further in view of Kleijn (US 5,517,595). Furthermore, claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kleijn et al. in view of Donovan et al. (US 6,266,637).

The present amendment and argument are presented to overcome the foregoing rejections, and to show the presence of patentable subject matter in the claims.

The claims are amended to provide a more detailed description of the claim terminology "modifying" and "parameters" to facilitate distinguishing the claimed subject matter from the teachings of the cited art, as discussed in the telephonic interview on April 11, 2005 between Examiner Vo and applicant's representative.

Thus, the changing of the pitch period of the formulated signal is now mentioned in claim 1, with corresponding amendments in the other independent claims. Furthermore, the periodicity estimate determination is clarified by stating that the pitch pulse locations are estimated. Additionally, voicing parameters

are classified as either voiced or unvoiced in claim 1. The amendments are based on teachings of the present specification, such as on page 10 at lines 11-14, page 11 at lines 3-11, and page 1 at lines 23-24. With these amendments, the distinction between the teachings of the claims and of the cited art becomes clarified so as to overcome the rejections and provide allowable subject matter.

Amended claim 1 now clearly states that the pitch period of the signal itself is changed in order to achieve a more periodic signal. This feature is not suggested by any of the cited art. Kleijn et al. desires to have a low power in the opposite ends of the signal block, where the pitch pulse has been positioned in the center of the block. Thus, the main goal of Kleijn et al. is to find appropriate limit values for a signal block in order to achieve the pitch pulse in the center of the defined block. In other words, Kleijn et al. deals with sectioning the signal and not about modifying the signal itself. This is totally different compared to the relocating of the pitch pulses in order to change the time period between two consecutive pitch pulses to a predefined value, as in the present invention. Kleijn et al. does not disclose the relocating of the pitch pulses in time domain.

Griffin discloses a method for calculating a normalized autocorrelation for each harmonic frequency in order to make the voiced/unvoiced decision for each harmonic component. The method is based on greater periodicity of a voiced audio signal waveform in the frequency domain compared to an unvoiced audio signal. The main goal of Griffin is to model the signal and achieve each harmonic of the signal. Additionally, with the help of autocorrelation, Griffin decides, whether the harmonic

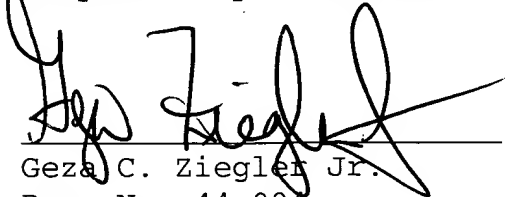
component is voiced or unvoiced. Thus, Griffin does not teach the relocating of the pitch pulses according to the present invention.

Therefore, with these amendments and the foregoing arguments, it is urged that the amended set of claims has overcome the rejections under 35 U.S.C. 103(a) to provide allowable subject matter.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check is enclosed for the RCE fee. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


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29 Nov 2005
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